

IN THE CLAIMS

Upon entry of the present amendment, the status of the claims will be as is shown below. The present listing of claims replaces all prior versions and listings of claims in the present application.

1. (Currently Amended) A method of generating a at least one key ~~or set of keys~~ from a person's biometrics data, the method ~~comprising the steps of:~~

- ~~(1)~~ capturing the person's biometric data;
- ~~(2)~~ normalizing the captured biometrics data[.];
- ~~(3)~~ extracting invariant feature measures from the normalized data and representing the feature measures as a bit pattern;
- ~~(4)~~ storing the bit pattern in associative memory in an ~~enrolment/registration~~ enrollment/registration phase and recalling the stored bit pattern from the associative memory in an identification/verification phase; and
- ~~(5)~~ generating the key from the recalled bit pattern.

2. (Currently Amended) A method as claimed in Claim 1, wherein the normalizing ~~normalization step~~ includes ~~the step of~~ selecting reference points of the captured biometrics data and normalizing the data with respect to the reference points.

3. (Currently Amended) A method as claimed in Claim 2, wherein the biometrics data comprises a face image and the reference points comprise the location of the eye portions of the face image.

4. (Currently Amended) A method as claimed in Claim 2, wherein the biometrics

data comprises a fingerprint image and the reference points comprise the location and orientation of the core of the fingerprint image.

5. (Currently Amended) A method as claimed in Claim 1, wherein the biometrics data comprises an image and the features are selected from normalized data corresponding to a portion of the image.

6. (Currently Amended) A method as claimed in Claim 1, wherein the bit pattern is generated from the features using a representation scheme.

7. (Currently Amended) A method as claimed in Claim 6, wherein the features are represented according to importance.

8. (Currently Amended) A method as claimed in Claim 1, wherein the ~~image is~~ biometrics data comprises a fingerprint image and the ~~features~~ feature measures are of minutiae points.

9 (Currently Amended) A method as claimed in Claim 1, wherein the ~~image is~~ biometrics data comprises a face image and the feature measures are of corners of the image.

10. (Currently Amended) A method as claimed in Claim 1, wherein the associative memory is implemented using a neural network.

11. (Currently Amended) A method as claimed in claim 10, wherein the neural network is a Hopfield network.

12. (Currently Amended) A method as claimed in Claim 1, wherein, ~~in step (5), the~~ generating comprises generating one of a symmetry key ~~or~~ and a public/private key pair is generated.

13. (Currently Amended) A method as claimed in claim 12, further comprising:
~~the step of performing~~ one of encryption ~~or~~ and decryption using the key when inputting or outputting data.

14. (Currently Amended) A method as claimed in Claim 1, wherein ~~steps (1)-(4)~~ the capturing, normalizing, extracting and storing are applied to a plurality of biometrics data sources, the key being generated from a respective plurality of retrieved bit patterns.

15. (Currently Amended) A method as claimed in Claim 14, wherein the biometrics data sources are of different types.

16. (Currently Amended) A method as claimed in Claim 1, wherein a plurality of keys corresponding to a plurality of persons are generated and the corresponding bit patterns are stored in at least two ~~or more~~ parallel associative memories.

17. (Currently Amended) A method as claimed in Claim 1, wherein the capturing step ~~(1)~~ is performed a plurality of times to provide a plurality of samples and only invariant feature measures persistent in all samples are used to generate the key.

18. (Currently Amended) A method ~~of~~ as claimed in Claim 1, further comprising:
generating a representation of a biometrics image, such that capturing the person's biometric data comprises ~~comprising the steps of:~~ (1) capturing the biometric image, (2) ~~normalizing the captured biometrics data,~~ (3) ~~extracting invariant features from the normalized data and representing the features as a bit pattern.~~

19. (Currently Amended) A method as claimed in Claim 18, wherein the features are selected from normalized data corresponding to a portion of the image.

20. (Currently Amended) A method as claimed in Claim 18, wherein the bit pattern is generated from the features using a representation scheme.

21. (Currently Amended) A method as claimed in Claim 20, wherein the features are represented according to importance.

22. (Currently Amended) A method of controlling access by generation of an access key from a person's biometrics data, the method comprising the steps of:

- (1) capturing the person's biometrics data;
- (2) normalizing the captured biometrics data[.];
- (3) extracting invariant features from the normalized data and representing the features as an initial bit pattern;
- (4) storing the initial bit pattern in associative memory for retrieval;
- (5) repeating ~~steps (1)-(3)~~ the capturing, normalizing and extracting at a subsequent time to generate a subsequent bit pattern;
- (6) inputting the subsequent bit pattern to the associative memory to recall the stored bit pattern; and
- (7) generating the key from the recalled bit pattern.

23. (Currently Amended) A method of generating a key from the person's biometrics data, the method comprising ~~which comprises the steps of:~~

- (1) capturing the person's biometric data;
- (2) normalizing the captured biometrics data[.];
- (3) extracting invariant features from the normalized data and representing the

features as a bit pattern;

(4) storing the bit pattern in associative memory for retrieval; and

(5) generating the key from the retrieved bit pattern.

24. (Currently Amended) ~~An apparatus~~ Apparatus for performing that performs the method of Claim 1.

25. (Currently Amended) ~~The apparatus~~ Apparatus as claimed in claim 24, the apparatus comprising:

~~being~~ a digital processor programmed to perform the method.

26. (Currently Amended) ~~The apparatus~~ Apparatus as claimed in claim 24, the apparatus comprising:

~~including~~ a biometrics capturing device.

27. (Currently Amended) ~~The apparatus~~ Apparatus as claimed in claim 26, wherein the device captures live biometrics data.

28. (Currently Amended) A computer readable medium storing a computer program including code portions which, when executed by computer processing hardware, generate
~~A codebook to store data stored in a codebook~~ from which, upon retrieval, a key is generated, the codebook comprising:

distributed associative memory.